

FALLS IN THE ELDERLY

Family Medicine Service Handout, January 2010

*Summarized from references listed below

BACKGROUND/EPIDEMIOLOGY

- 30-40% of community-dwelling adults over 65 fall each year. Nursing home residents and hospitalized patients fall at even higher rates. Risk of falls increases with age.
- Of these falls, 20-30% result in serious injuries, including fractures, dislocations, head trauma, soft tissue injury. 90% of hip fractures occur because of falls.
- Falls can also result in psychologic harm and poor quality of life due to restricted physical and social activities as well as functional decline in ADL's – some of which is self-imposed from fear of repeat falls – as well as depression and social isolation.

RISK FACTORS

- **Environmental hazards** (e.g., falls from beds, using toilet/tub/shower, tripping over rugs) account for a third of falls.
- **Gait or balance disturbance, muscle weakness, dizziness/vertigo** account for another third of falls.
- Other factors that significantly increase risk include:
 - Use of ≥ 4 medications – particularly benzodiazepines, antipsychotics, antiarrhythmics, digoxin, diuretics, anticonvulsants, TCAs.
 - History of falls
 - Use of assistive device (e.g., cane, walker)
 - Visual deficit
 - Hearing deficit
 - Arthritis
 - Impaired activities of daily living
 - Depression
 - Cognitive impairment
 - Postural hypotension and syncope
 - Neurologic changes (e.g., light touch/vibratory sensation, vestibular & proprioceptive sensation)
 - Drop attack
 - Age-related physiological decline (e.g., slower reflexes)
 - Acute illness (e.g., PNA, UTI, MI, COPD exac.)
 - Chronic conditions, such as neuromuscular d/o
 - Risky behavior (i.e., intoxication)

FALL ASSESSMENT

- Elderly patients should be asked annually whether any falls have occurred in the past year. Some elderly pts may omit this history, if not asked specifically, from fear of being institutionalized.
- Indication. A fall assessment – including history, physical, testing – should be performed for the following patients:
 - Presents with a fall
 - Reports recurrent falls (>2 in 6 mos)
 - Has gait/balance abnormalities
- Medical History
 - Circumstances of the fall and associated symptoms
 - Medications – esp. those which can cause presyncope or peripheral neuropathy
 - Acute & chronic medical problems
 - Mobility
 - Functional status (ADL's)
 - Cognition
 - Alcoholism (which can cause peripheral neuropathy/myopathy)
- Physical Exam
 - Postural changes in vital signs
 - Arrhythmia
 - Carotid bruit
 - Visual deficit
 - Gait/balance abnormality – think Parkinson's
 - Lower extremity strength and range of motion
 - Neurologic exam, including focal deficits, proprioception, vibratory sense, cerebellar function.
 - **GET UP & GO TEST – Observe for unsteadiness as patient gets up from chair without using arms (may cross them across the chest), walks 10 feet, turns around, walks back to chair, sits down. Timing should be < 16 seconds. If > 16 seconds, then pt has increased risk of falls. If > 30 seconds, then very high risk of falls.**
 - ONE-LEG BALANCE TEST – Stand on one leg, flexing the other knee to clear the floor, for as long as possible (should be > 5 sec). If less time, then predicts injurious falls.
- Labs/Studies – *Consider* evaluating for treatable causes of falls, such as anemia, dehydration, hypoglycemia, hyperglycemia, peripheral neuropathy, syncope, infection. Should be guided by history and physical!
 - CBC
 - TSH

- B12, RBC folate (better measure of long-term folate storage). A trial of thiamine replacement is more practical than testing for deficiency.
- Electrolytes, BUN, creatinine, glucose
- UA/cx
- Utox
- 25-OH Vitamin D
- Holter monitor, echo
- Brain imaging

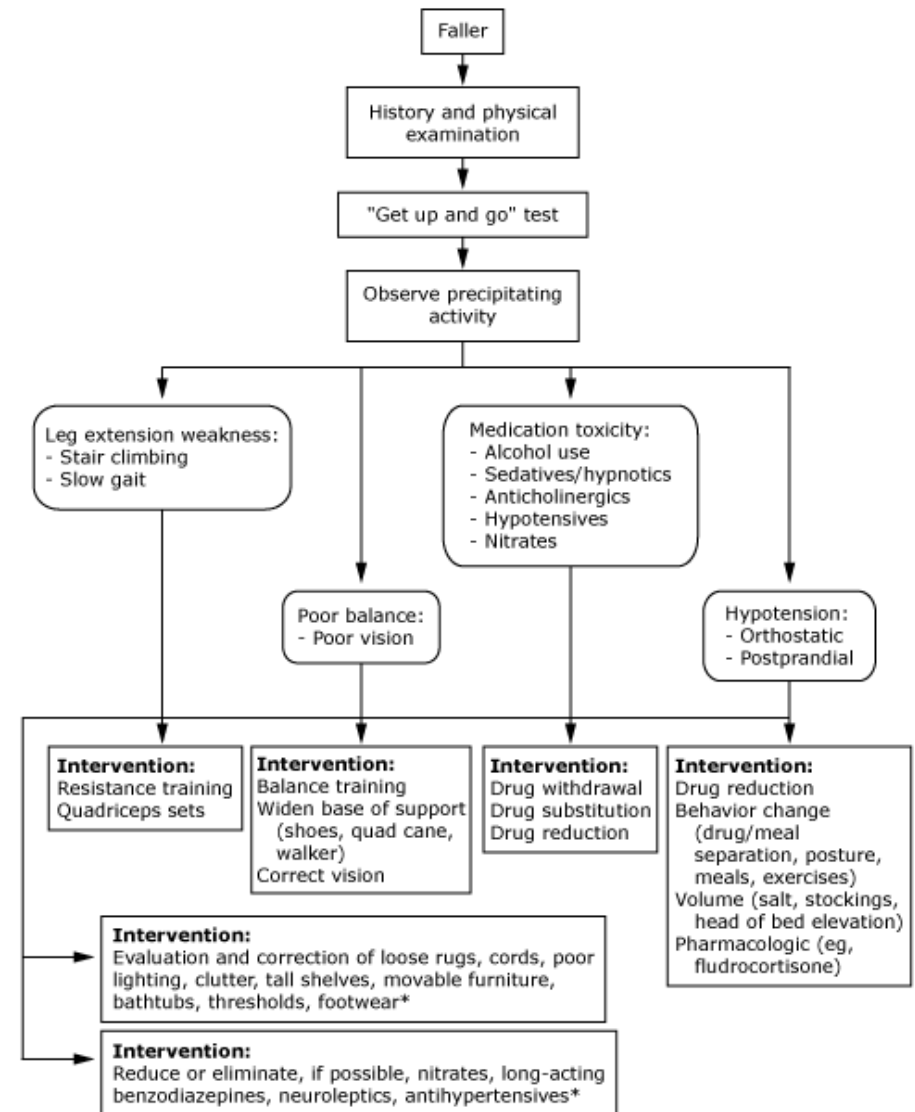
INTERVENTIONS

- Exercise and physical therapy, particularly focused on gait, balance, strength, and transfer. **Medicare pts can use private PT.
- Appropriate assistive devices (cane, walker, etc.) recommended by OT
- Use of hearing aids and corrective lenses
- Environmental hazard reduction – Great indication for HOME VISIT!
 - Home Health Agency vs. OT referral for home safety assessment & modification
 - Improved room lighting & use of nightlights
 - Removal of loose floor rugs and electrical cords
 - Use of nonslip bath mats, stair rails, shower/tub rails, toilet rails, raised toilet seats
 - Appropriate footwear that encases foot (no flip-flops!), with low heel and thin sole.
 - Remove clutter, objects on the floor, low furniture.
- Medication adjustment/monitoring/withdrawal
- Rising slowly if postural hypotension
- Pacemaker for carotid sinus disease
- Hip protectors
- Treatment of medical conditions that are contributing to falls
- Treatment of osteoporosis and medical conditions that make falls more injurious.
- Treatment of vitamin D deficiency/insufficiency

REFERENCES

- American Geriatrics Society, British Geriatrics Society, and American Academy of Orthopaedic Surgeons Panel on Falls Prevention. Guideline for the Prevention of Falls in Older Persons. 2001.
- Bischoff-Ferrari, HA, et al. Fall Prevention with Supplemental and Active Forms of Vitamin D: A Meta-analysis of Randomised Controlled Trials. *British Medical Journal*. 2009;339:b3692.
- Diamond, J. Lecture handout entitled “Health Care Maintenance in the Elderly.”
- Fuller, GF. Falls in the Elderly. *American Family Physician*. 2000; 61:2159-68.
- Heflin, MT. Geriatric Health Maintenance. *UpToDate*, version 17.3.
- Rao, SS. Prevention of Falls in Older Patients. *American Family Physician*. 2005;72:81-8.

From UpToDate: Therapeutic Approach to Patient with Falls



* Appropriate intervention for all patients with falls.

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